

was observed at Jupiter, Fla., on the 3d; damage was caused to tender plants. Tender vegetation was injured by frost at Tampa, Fla., on the 3d. The heavy frost of the 4th caused considerable damage in the region about Titusville, Fla., the damage being largely confined to the west shore of the Indian River. At Jupiter, Fla., pineapples were protected in many places by the smoke of fires which were kept up for that purpose. Frosts from the 7th to 9th were very destructive to vegetation and pineapples about Jupiter. The observer

reports that owing to the timely cold-wave warning every precaution was taken to prevent injury to crops. Many persons kept fires burning for several nights, thereby lessening the damage to a great extent. Ice formed on the 8th at Jacksonville, Fla. On the 13th ice $\frac{3}{4}$ inch in thickness formed at Corpus Christi, Tex., and all vegetables were reported killed. The frost of the 13th, 16th, and 19th damaged wheat about Brady, Tex. The frost of the 14th and 19th killed vegetation about Galveston, Tex.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for January, 1892, as determined from the reports of about 2,000 stations, is exhibited on Chart III. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

In January the monthly precipitation is usually greatest on the extreme north Pacific coast, where it exceeds 10.00. At Neah Bay, Wash., 9 years' record, the normal amount for the month is 17.31. On the immediate Pacific coast north of the 40th parallel, and along the line of the Central Pacific Railroad crossing the summit of the Sierra Nevada Mountains, the average precipitation for January exceeds 8.00, and it is 4.00 to 6.00 generally along the Pacific coast north of the 37th parallel. The greatest precipitation over the eastern part of the country is noted at Hatteras, N. C., where the normal amount is 6.33; it is more than 4.00 along the immediate New England and middle Atlantic coasts, over east-central Florida, generally over districts south of the Ohio River and east of Texas, in central Utah, and in the mountains east of San Diego, Cal. From the Lake Superior region and the British Northwest Territory to the Rio Grande, Gila, and lower Colorado valleys the normal precipitation is less than 2.00, except over a part of the northern plateau and over the central part of the middle plateau; and from Minnesota, North Dakota, and eastern Montana to the Rio Grande River the normal amount is less than 1.00.

In January, 1892, the monthly precipitation was greatest at Montgomery, Ala., where it was 17.78; it exceeded 10.00 in south-central North Carolina, western South Carolina, northern Georgia, east-central and southeastern Alabama, extreme western Florida, southern Mississippi, south-central Louisiana, along the California coast between San Francisco and Eureka, and at Neah Bay, Wash.; and exceeded 8.00 on the west coast of Nova Scotia. Over a great part of the Rocky Mountain and plateau regions, from the west Lake Superior region and the extreme upper Mississippi valley to the northeastern slope of the Rocky Mountains, and in the Rio Grande Valley the monthly precipitation was less than 1.00. Over a part of the northern plateau the amount ranged from 2.00 to 6.00, and in central Arizona and central and northwestern Colorado it exceeded 2.00.

DEPARTURES FROM NORMAL PRECIPITATION.

The monthly precipitation was in excess of the January average in the Saint Lawrence Valley and the Canadian Maritime Provinces, generally in the Atlantic coast and east Gulf states, from the central upper lake region to Missouri, and from western Nebraska and western South Dakota to Arizona. The greatest excess in monthly precipitation was 12.80, at Montgomery, Ala.; the excess was 5.00 at Mobile, Ala.; it was more than 3.00 at Pensacola, Fla., Augusta, Ga., Baltimore, Md., and Yarmouth, N. S.; and was more than 2.00

along the west coast of the Gulf of Saint Lawrence, in the District of Columbia and a great part of Maryland, and from southern North Carolina to the middle Gulf coast.

The monthly precipitation was deficient on the Pacific coast, over the northern plateau and the north part of the middle plateau, from the northeast slope of the Rocky Mountains to the west Lake Superior region, in the middle Missouri valley, on the southeast slope of the Rocky Mountains, from the west Gulf states over the Ohio Valley and the south part of the Lake region, at points along the immediate south New England and middle and south Atlantic coasts, and over the south part of the Florida Peninsula. The most marked deficiency was noted at Olympia and Fort Canby, Wash., and Hatteras, N. C., where it was more than 4.00, and the deficiency was more than 2.00 over a great part of the Pacific coast, along the Mississippi and Ohio rivers from Memphis, Tenn., to Louisville, Ky., and on the extreme eastern coast of North Carolina.

Considered by districts the average percentage of the normal in districts where the precipitation was deficient was about as follows: southern plateau region, 230; east Gulf states, 175; upper Mississippi valley, 153; middle Atlantic states, 133; Missouri Valley, 121; south Atlantic states, 116; northeast slope of the Rocky Mountains, 115; New England, 114; upper lake region, 110; northern plateau region, 108. In districts where the precipitation was deficient the percentage of the normal was about as follows: Key West, Fla., 28; extreme northwest, 50; south Pacific coast, 51; southeast slope of the Rocky Mountains, 52; middle-eastern slope of the Rocky Mountains, 56; middle Pacific coast, 62; north Pacific coast, 64; Ohio Valley and Tennessee, 70; west Gulf states, 74; lower lake region, 89. The monthly precipitation averaged normal for the middle plateau region.

DEVIATIONS FROM AVERAGE PRECIPITATION.

The following table shows for certain stations, as reported by voluntary observers, (1) the average precipitation for January for a series of years; (2) the length of record during which the observations have been taken and from which the average has been computed; (3) the total precipitation for January, 1892; (4) the departure of the current month from the average; (5) and the extremes for January during the period of observation and the years of occurrence:

State and station.	County.	(1) Average for the month of Jan.	(2) Length of record.	(3) Total for Jan., 1892.	(4) Departure from average.	(5) Extremes for Jan.			
						Greatest.		Least.	
						Am't.	Year.	Am't.	Year.
Arkansas.		Inches	Years	Inches	Inches.	Inches.		Inches	
Lead Hill.....	Boone.....	3.02	10	.....	7.37	1890	1.33	1887	
California.									
Sacramento.....	Sacramento.	3.78	35	1.78	-2.00	15.04	1862	0.19	1889
Connecticut.									
Middletown.....	Middlesex...	4.41	30	.....	9.24	1891	1.45	1876	
Florida.									
Merritts Island..	Brevard.....	3.61	14	0.42	-3.19	10.45	1878	0.42	1892
Georgia.									
Forsyth.....	Monroe.....	5.26	18	9.59	+4.33	10.08	1883	2.22	1880
Illinois.									
Peoria.....	Peoria.....	1.73	34	1.25	-0.48	4.27	1862	0.20	1872
Riley.....	McHenry....	1.98	41	1.73	-0.25	5.96	1876	0.45	*

Deviations from average precipitation—Continued.

State and station.	County.	(1) Average for the month of Jan.	(2) Length of record.	(3) Total for Jan., 1892.	(4) Departure from average.	(5) Extremes for Jan.			
						Greatest.		Least.	
						Am't.	Year.	Am't.	Year.
<i>Indiana.</i>									
Logansport	Cass	2.15	17	1.30	-0.85	5.69	1890	0.23	1881
Vevay	Switzerland	4.13	25	2.43	-1.70	9.03	1876	0.75	1872
<i>Iowa.</i>									
Cresco	Howard	1.37	20	0.57	-0.80	3.72	1886	0.38	72, '84
Monticello	Jones	1.65	37	1.44	-0.21	3.77	1886	0.29	1865
Logan	Harrison	1.29	23	0.90	-0.39	3.10	1881	0.10	1872
<i>Kansas.</i>									
Lawrence	Douglas	1.29	27	0.83	-0.46	3.05	1878	0.12	1875
Wellington	Sumner	1.01	13	.....	.....	2.40	1890	0.18	1881
<i>Louisiana.</i>									
Grand Coteau	St. Landry	6.82	9	4.54	-2.28	13.30	1883	2.52	1887
<i>Maine.</i>									
Orono	Penobscot	4.72	22	4.80	+0.08	7.66	1891	2.00	1875
<i>Maryland.</i>									
Cumberland	Allegany	2.16	20	3.18	+1.02	3.90	1878	0.30	1887
<i>Massachusetts.</i>									
Amherst	Hampshire	3.43	56	5.41	+1.98	8.17	1891	0.99	1849
Newburyport	Essex	3.87	13	4.70	+0.83	7.76	1886	1.00	1875
Barnstable	Bristol	4.56	19	4.98	+0.42	8.94	1891	1.57	1879
<i>Michigan.</i>									
Kalamazoo	Kalamazoo	2.37	16	1.20	-1.17	4.90	1876	1.10	1879
Thornville	Lapeer	2.01	15	1.41	-0.60	3.38	1890	0.58	1879
<i>Minnesota.</i>									
Minneapolis	Hennepin	1.19	26	0.66	-0.53	3.01	1886	0.06	1869
<i>Montana.</i>									
Fort Custer	Custer	0.80	12	1.31	+0.51	2.85	1884	0.08	1885
<i>New Hampshire.</i>									
Hanover	Grafton	2.93	47	3.37	+0.44	9.75	1851	0.31	1853
<i>New Jersey.</i>									
Moorestown	Burlington	3.51	28	5.64	+2.13	5.82	1882	1.13	1867
South Orange	Essex	4.39	20	6.70	+2.31	10.55	1891	1.17	1876
<i>New York.</i>									
Cooperstown	Otsego	2.56	38	4.99	+2.43	5.54	1891	0.32	1860
Palermo	Oswego	3.16	38	.....	.....	6.50	1874	0.16	1884
<i>North Carolina.</i>									
Lenoir	Caldwell	4.44	20	5.40	+0.96	9.60	1878	1.10	1890
<i>Ohio.</i>									
N. Lewisburgh ..	Champaign	3.77	20	1.00	-2.77	8.67	1876	0.44	1877
Wauseon	Fulton	2.34	18	1.42	-0.92	4.14	1890	1.29	1879
<i>Oregon.</i>									
Albany	Linn	8.52	15	5.27	-3.25	14.45	1867	2.22	1882
Eola	Polk	6.07	22	4.20	-1.87	16.68	1888	2.53	1875
<i>Pennsylvania.</i>									
Dyberry	Wayne	3.30	22	5.65	+2.35	5.65	1892	0.70	1872
Grampian Hills ..	Clearfield	3.75	21	3.49	-0.26	5.47	1888	1.21	1872
Wellsborough ..	Tioga	6.44	12	3.67	-2.77	12.17	1886	1.98	1890
<i>South Carolina.</i>									
Statesburgh	Sumter	3.48	10	6.65	+3.17	6.65	1892	0.90	1890
<i>Tennessee.</i>									
Austin	Wilson	5.57	23	3.47	-2.10	18.11	1882	2.66	1886
<i>Texas.</i>									
New Ulm	Austin	4.17	18	2.21	-1.96	10.56	1882	1.00	1887
<i>Vermont.</i>									
Stratford	Orange	3.64	18	4.20	+0.56	6.10	1891	1.70	1878
<i>Virginia.</i>									
Birdsnest	Northampton	3.76	23	5.50	+1.74	6.75	1882	1.00	1876
<i>Washington.</i>									
Fort Townsend ..	Jefferson	2.22	21	1.35	-0.87	4.65	1890	0.66	1859
<i>Wisconsin.</i>									
Madison	Dane	1.90	26	2.42	+0.52	3.65	1874	0.40	1878

* 1865, 1867, and 1872.

YEARS OF GREATEST PRECIPITATION FOR JANUARY.

The greatest precipitation ever reported for January was noted at Dyberry, Pa., Baltimore, Md., Statesburgh, S. C., Montgomery, Ala., Yuma, Ariz., and Walla Walla, Wash., in 1892, the absolute excess over the greatest amount previously reported varying from 0.15 at Yuma, Ariz., to 3.08 at Montgomery, Ala. In an area extending from central Arkansas over eastern Missouri, central Illinois, central Indiana, and central Ohio the greatest precipitation was reported in 1890; in an area extending from eastern Kentucky to the west Gulf coast in 1882; over northern California in 1878; and along the middle and lower Ohio river in 1876.

YEARS OF LEAST PRECIPITATION FOR JANUARY.

The least precipitation ever reported for January was noted at Merritts Island, Fla., Louisville, Ky., Toledo, Ohio, and Duluth and Saint Paul, Minn., the absolute deficiency below the least amount previously reported for January varying from 0.07 at Duluth, Minn., to 0.48 at Louisville, Ky. On the northeast slope of the Rocky Mountains the least precipitation for January was reported in 1891; on the Pacific coast north of the 38th parallel in 1889; from Arkansas and eastern Texas to the south Pacific coast in 1887; in the middle Mississippi and lower Missouri valleys in 1872 and 1881; and from the middle

Ohio river to the Atlantic coast between the 38th and 40th parallels in 1872.

EXCESSIVE PRECIPITATION.

The following tables show, by states, the number of stations reporting monthly precipitation to equal or exceed 10.00; precipitation to equal or exceed 2.50 in 24 hours; and precipitation to equal or exceed 1.00 in 1 hour in January, 1892:

Monthly precipitation to equal or exceed 10.00.

State.	Number of stations.	State.	Number of stations.
Georgia	8	Florida	1
Alabama	7	Mississippi	1
California	2	Louisiana	1
North Carolina	1	Washington	1
South Carolina	1		

Precipitation to equal or exceed 2.50 in 24 hours.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Alabama	20	11, 12, 13.	Florida	6	11-12, 12-13, 14, 14-15.
Louisiana	17	8, 10-11, 11, 11-12, 12, 13, 18-19.	Mississippi	5	10-14, 11, 12, 13.
Georgia	11	5-6, 10-13, 11-13, 12-13, 12-14, 18, 18-19.	North Carolina	3	12-13, 19.
California	6	1, 1-2, 26, 28-29.	Idaho	2	2-3, 28-29.
			South Carolina	1	28-29, 29.
			Michigan	1	1.
			Tennessee	1	13.

Precipitation to equal or exceed 1.00 in 1 hour.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Alabama	2	1, 11.			

Table of excessive precipitation, January, 1892.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
<i>Alabama.</i>						
Auburn.....	<i>Inches.</i>	<i>Inches.</i>		<i>Inches</i>	<i>h. m.</i>	
Bermuda.....		2.59	13			
Brewton.....		3.06	12			
Carrollton.....	12.45	8.55	12-13			
Childersburgh.....		2.98	12-13			
Claiborne Landing.....		3.70	11-12			
Daphne.....		3.10	12-13			
Gadsden.....		5.62	11-12			
Livingston (a).....		2.80	12-13			
Mobile.....		3.51	12			
Montgomery.....		3.64	12-13	1.10	1 00	I
Mount Vernon Barracks.....	17.78	9.98	12-13			
Mount Willing.....		3.61	12			
Newton.....	12.55	5.00	12			
Oxanna.....		3.60	12			
Pushmataha.....	10.11	5.74	11-12			
Scottsboro.....		3.01	12			
Selma (a).....				1.06	1 00	II
Tallahassee Falls.....	10.25	4.76	12-13			
Valley Head.....	12.77	5.10	12-13			
Wiggins.....		2.60	11-12			
<i>California.</i>						
Forestville.....	10.75	7.47	11-13			
Fort Ross.....		5.08	I			
Julian.....	10.86	8.20	1-2			
San Bernardino.....		5.50	28-29			
Upper Mattole.....		2.73	31			
Do.....	10.37	4.85	1-2			
<i>Florida.</i>						
Brookville.....		2.76	26			
Fort Barrancas.....		2.60	14			
Pasadena.....	10.63	5.42	12-13			
Pensacola.....		2.84	14			
Tampa.....		2.52	11-12			
Tarpon Springs.....		2.75	14-15			
<i>Georgia.</i>						
Athens (a).....		2.50	14			
Athens (b).....		3.00	18			
Atlanta.....	11.82	3.43	12-13			
		3.15	12-13			

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall in inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
<i>Georgia—Continued.</i>		<i>Inches.</i>			<i>Inches.</i>	<i>h. m.</i>
Canton	12.59	8.95	10-13			
Diamond	11.87	6.07	12-13			
Elberton	11.94	3.10	18			
Hephzibah		2.50	5-6			
Marietta	10.66	5.22	12-14			
Monticello		2.92	18-19			
Point Peter	11.20	3.25	18			
Resaca	10.64	5.61	12-13			
Rome	11.69	6.83	13-11			
<i>Idaho.</i>						
Kootenai		3.00	2-3			
Do		3.00	28-29			
<i>Louisiana.</i>						
Abbeville	10.20	2.90	11			
Amite City		3.20	12			
Clinton		2.80	13			
Donaldsonville		2.95	12			
Farmerville		3.00	15			
Grand Coteau		2.50	12			
Jackson Barracks		5.72	11-12			
Jeanerette		3.45	8			
LaFayette		3.05	12			
Lake Charles		2.80	18-19			
Luling		3.43	11			
Maurepas		4.08	12			
New Orleans		2.80	10-11			
Paincourtville		4.50	11-12			
Plaquemine		2.50	12			
Roseland		3.26	12			
West End		2.80	13			
<i>Michigan.</i>						
Hart		2.50	1			
<i>Mississippi.</i>						
Batesville		3.20	11			
Bay Saint Louis	14.30	11.10	10-14			
Enterprise		2.96	13			
Logtown		3.10	12			
Meridian		3.04	12			
<i>North Carolina.</i>						
Concord	11.50	3.10	19			
Lenoir		2.80	12-13			
Murphy	10.04	3.80	12-13			
<i>South Carolina.</i>						
Belmont	10.45					
Columbia		2.93	18			
Evergreen		2.50	19			
<i>Tennessee.</i>						
Parksville		3.00	13			
<i>Washington.</i>						
Neah Bay	13.51	4.00	29			
Port Angeles		3.75	28-29			

MAXIMUM RAINFALL IN ONE HOUR OR LESS.

The following table is a record of the heaviest rainfall during January, 1892, for periods of five and ten minutes and one hour, as reported by regular stations of the Weather Bureau furnished with self-registering gauges:

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
Atlanta, Ga.	Inch.		Inch.		Inch.	
Bismarck, N. Dak. †	0.10	13	0.16	13	0.45	13
Boston, Mass.	0.10	2	0.17	2	0.47	2
Buffalo, N. Y. †						
Cincinnati, Ohio †						
Chicago, Ill. †						
Cleveland, Ohio †						
Denver, Colo. †						
Detroit, Mich. †						
Dodge City, Kans. †						
Duluth, Minn. †						
Eastport, Me.	0.10	7	0.15	7	0.32	19
Galveston, Tex.	0.04	8	0.07	8	0.20	8
Indianapolis, Ind. †						
Jacksonville, Fla.	0.23	11	0.35	11	0.85	11
Jupiter, Fla.	0.15	15	0.20	18	0.60	18
Kansas City, Mo. †						
Key West, Fla.	0.12	15	0.17	15	0.40	15
Marquette, Mich. †						
Memphis, Tenn. †						
New York, N. Y.	0.07	13	0.09	13	0.29	13
New Orleans, La.	0.13	11	0.18	11	0.74	11
Norfolk, Va.	0.05	15	0.10	15	0.30	15
Philadelphia, Pa.	0.03	13	0.06	13	0.25	13
Philadelphia Water Works	0.04	13	0.08	13	0.23	13
Pittsburg, Pa. †						
Portland, Oregon.	0.05	28	0.05	28	0.10	28
Saint Louis, Mo. †						
Saint Paul, Minn. †						
San Diego, Cal.	0.05	28	0.10	28	0.30	28
San Francisco, Cal. †						

Maximum rainfall in one hour or less—Continued.

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
Savannah, Ga.	Inch.		Inch.		Inch.	
Washington, D. C.	0.14	6	0.23	6	0.28	14
Wilmington, N. C.	0.06	2	0.12	2	0.30	2
	0.10	14	0.18	14	0.50	14

*Self-register out of order.

†No record on account of snow.

The following tables show the number of years for which monthly precipitation to equal or exceed 10.00 inches, daily precipitation to equal or exceed 2.50 inches, and hourly precipitation to equal or exceed 1.00 inch has been reported in the several states and territories for January during the last 22 years.

Excessive monthly precipitation.

State.	No. years noted.	State.	No. years noted.
California	15	Ohio	1
Washington	14	South Carolina	1
Oregon	13	Arizona	0
Louisiana	8	Colorado	0
Georgia	8	The Dakotas	0
North Carolina	8	Delaware	0
New York	7	District of Columbia	0
Tennessee	7	Idaho	0
Alabama	7	Indian Territory	0
Texas	5	Iowa	0
Mississippi	5	Maine	0
Arkansas	4	Maryland	0
Indiana	3	Michigan	0
Massachusetts	3	Minnesota	0
Florida	3	Montana	0
Illinois	2	Nebraska	0
New Jersey	2	New Mexico	0
Virginia	2	Pennsylvania	0
Connecticut	1	Rhode Island	0
Kansas	1	Utah	0
Kentucky	1	Vermont	0
Missouri	1	West Virginia	0
Nevada	1	Wisconsin	0
New Hampshire	1	Wyoming	0

Excessive daily precipitation (24 hours).

Louisiana	14	Missouri	3
Tennessee	14	Arizona	2
North Carolina	13	Indian Territory	2
Texas	11	Maine	2
Georgia	11	Maryland	2
Florida	9	New Hampshire	2
Oregon	8	Utah	2
California	8	Delaware	1
Mississippi	8	Nebraska	1
Alabama	7	Nevada	1
Massachusetts	6	Vermont	1
New York	6	Idaho	1
Virginia	6	Michigan	1
Washington	6	Colorado	0
Arkansas	5	District of Columbia	0
Illinois	5	The Dakotas	0
Indiana	5	Kansas	0
Ohio	5	Minnesota	0
Pennsylvania	5	Montana	0
South Carolina	5	New Mexico	0
Kentucky	4	Rhode Island	0
New Jersey	4	West Virginia	0
Connecticut	3	Wisconsin	0
Iowa	3	Wyoming	0

Excessive hourly precipitation.

Illinois	2	Michigan	0
Texas	2	Massachusetts	0
California	1	Minnesota	0
Florida	1	Mississippi	0
Georgia	1	Missouri	0
North Carolina	1	Montana	0
Tennessee	1	Nebraska	0
Alabama	1	Nevada	0
Arizona	0	New Hampshire	0
Arkansas	0	New Jersey	0
Colorado	0	New Mexico	0
Connecticut	0	New York	0
The Dakotas	0	Ohio	0
Delaware	0	Oregon	0
District of Columbia	0	Pennsylvania	0
Idaho	0	Rhode Island	0
Indiana	0	South Carolina	0
Indian Territory	0	Utah	0
Iowa	0	Vermont	0
Kansas	0	Virginia	0
Kentucky	0	Washington	0
Louisiana	0	West Virginia	0
Maine	0	Wisconsin	0
Maryland	0	Wyoming	0

The following tables give exceptionally heavy monthly, daily, and hourly precipitation reported for January during the last 22 years:

Monthly.

Station and state.	Am't.	Year.	Station and state.	Am't.	Year.
	Inches.			Inches.	
Upper Mattole, Cal.....	41.63	1888	Astoria, Oregon.....	22.16	1871
Do.....	33.40	1889	Iowa Hill, Cal.....	20.87	1889
Neah Bay, Wash.....	30.50	1874	Cisco, Cal.....	20.86	1881
Emigrant Gap, Cal.....	25.69	1881	Red Bluff, Cal.....	20.71	1878
Redding, Cal.....	22.69	1878	Calistoga, Cal.....	20.64	1878
Neah Bay, Wash.....	22.30	1887	Tatoosh L. H., Wash.....	20.50	1871
Ferndale, Cal.....	22.17	1889	Alta, Cal.....	20.00	1881

Daily (24 hours).

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
	Inches.			Inches.	
Upper Mattole, Cal....	31.63	27-31, 1888	Oxanna, Ala.....	5.74	11-12, 1892
Bay Saint Louis, Miss.	11.10	10-14, 1892	Jackson Barracks, La.	5.72	11-12, 1892
Montgomery, Ala.....	9.98	12-13, 1892	Shreveport, La.....	5.71	13, 1885
Canton, Ga.....	8.95	10-13, 1892	Fostoria, Tenn.....	5.70	14-15, 1885
Hydesville, Cal.....	8.86	28-31, 1888	Daphne, Ala.....	5.62	11-12, 1892
Brewton, Ala.....	8.55	12-13, 1892	Resaca, Ga.....	5.61	12-13, 1892
Point Pleasant, La.....	8.40	1-2, 1886	Clintonville, Ala.....	5.50	23-24, 1885
Fort Ross, Cal.....	8.20	1-2, 1892	Julian, Cal.....	5.50	28-29, 1892
Wiggins, Ala.....	7.47	11-13, 1892	Dale Enterprise, Va.....	5.49	8-9, 1886
Fort McDermitt, Nev.....	7.18	19-21, 1888	Mahanoy Plane, Pa.....	5.45	4-5, 1886
Emory Grove, Md.....	7.00	30, 1879	Fort Barrancas, Fla.....	5.42	12-13, 1892
Portland, Oregon.....	6.86	5-6, 1883	Cheneyville, La.....	5.40	20, 1891
Rome, Ga.....	6.83	11-13, 1892	Pana, Ill.....	5.25	*
Greensborough, Ala.....	6.77	2-3, 1886	Marietta, Ga.....	5.22	12-14, 1892
Clarksville, Tex.....	6.50	-1, 1875	Fulton, Ark.....	5.20	1, 1890
Marion, Ala.....	6.50	2-3, 1886	Cairo, Ill.....	5.17	17-18, 1876
Huntsville, Tex.....	6.45	2, 1890	Tallassee Falls, Ala.....	5.10	12-13, 1892
Jupiter, Fla.....	6.38	11-12, 1889	Kenton, Ohio.....	5.10	27-28, 1876
Lynchburg, Va.....	6.32	23, 1885	Forestville, Cal.....	5.08	1, 1892
Neah Bay, Wash.....	6.15	6-7, 1885	Tuscaloosa, Ala.....	5.00	2-3, 1886
Diamond, Ga.....	6.07	12-13, 1892	Delhi, La.....	5.00	22-23, 1887
Hephzibah, Ga.....	6.03	19-20, 1889	Point Pleasant, La.....	5.00	7-8, 1886
Fayette, Miss.....	6.00	6, 1883	Jeanerette, La.....	5.00	8, 1891
Fayetteville, N. C.....	6.00	8-9, 1879	Lake Charles, La.....	5.00	8, 1891
Houston, Tex.....	5.89	7-8, 1891	Mount Willing, Ala.....	5.00	12, 1892

* December 31, 1889-January 1, 1890.

One hour and less.

Station and state.	Amount.	Time.	Date.
	Inches.	h. m.	
Galveston, Tex.....	0.25	0 05	15, 1890
Key West, Fla.....	0.25	0 05	22, 1891
Jacksonville, Fla.....	0.23	0 05	11, 1892
Atwood, Ill.....	4.30	1 00	12, 1890

SNOW (in inches and tenths).

The first snow of the season was reported as follow: 2d, Valley Head, Ala.; Knoxville, Tenn. 5th, Marietta, Ga.; Montgomery, Ala. 6th, Atlanta, Columbus, Forsyth, and Lithia Springs, Ga.; Agricultural College, Louisville, Palo Alto, and Vicksburg, Miss.; Ashwood, Tenn. 7th, Americus, Canton, Resaca, and Rome, Ga. 8th, Mountain Home, Ala.; Gillsville, Ga. 9th, Decatur, Ala.; Toccoa and Waynesborough, Ga.; Liberty Hill, La. 11th, Batesville, Miss.; Haymond, Roby, Silver Falls, and Temple, Tex. 12th, Fort Smith, Ala.; South McAlester, Ind. T.; Shreveport, La.; Greenville, Miss.; Arlington, Austin, Gainesville, Graham, Mesquite, Mountain Spring, Odessa, and Palestine, Tex. 13th, Emilie, La.; Washington, Miss.; Nacogdoches, Tex.

14th, Bermuda and Mobile, Ala.; Fort Barrancas and Pensacola, Fla.; Albany, Blakely, Millen, and Poulan, Ga.; Houma, Luling, and New Orleans, La.; Enterprise, Meridian, Pearlington, and Ship Island, Miss. 15th, Louisville, Ga.; Waynesborough, Miss. 17th, Healdton, Ind. T.; Lawrence, La.; Mayersville, Miss.; Brady, Childress, Colorado, College Station, Highland, Kent, Quanah, and Wichita Falls, Tex. 18th, Port Gibson, Miss.; Big Spring, Brownwood, Burnet, Corpus Christi, Forestburgh, Haskell, Menardville, New Braunfels, Round Rock, and San Angelo, Tex. 19th, Conshatta and Marksville, La.; Canton, Duck Hill, Fayette,

Vaiden, and Yazoo City, Miss.; Cuero, Durham, Duval, Galveston, and Hallettsville, Tex. 20th, Fredericksburg, Tex. 21st, Fort Apache, Ariz. 23d, Helena, Ark.

In New England the monthly snowfall was below the average, and in the southern sections it afforded little protection to crops. On the 15th a depth of 1 to 15 inches was reported over a considerable part of New England. In southern Calvert county, Md., the only heavy snow of the month fell on the 15th, and it remained on the ground so short a time that it was of no practical benefit to crops. In central North Dakota the snow of the latter part of the month was insufficient to afford protection to crops.

On the 1st a snowstorm extended from Iowa over the upper lake region, a depth of 12.6 being noted at Marquette, Mich. Snow continued over the Lake region during the 2d, and a heavy fall of snow was reported on that date in southern and western Colorado. A heavy snowstorm prevailed over South Dakota on the 6th; heavy snow also occurred in the middle Atlantic states and along the New England coast on that date; at Buffalo, N. Y., a depth of 17 was noted. Owing to heavy snow drifts no trains arrived at Bismarck, N. Dak., on the 8th. At Chattanooga, Tenn., a depth of 10 was reported on the 9th, and trains were delayed. Heavy snow fell in parts of Nebraska, Kansas, and Indian and Oklahoma territories on the 10th; a heavy snowstorm was also reported in southeastern Virginia.

On the 12th snow and sleet fell to a depth of 3.5 at Memphis, Tenn. Heavy snow was reported in southern Indiana on the 13th, and from the 12th to 14th a depth of 6.2 was noted at Cincinnati, Ohio, the heaviest snowfall at that place in several years. Light snow was general in Louisiana on the 13th and 14th. The snowstorm reached the Atlantic coast on the 15th, a depth of 4 to 9 being reported in Maryland and Virginia, and the snowfall was heavy thence over New England. A severe snowstorm set in over Kansas and Nebraska on the 17th, and extended over the Ohio Valley by the 18th. From the 17th to 19th a depth of 10 was reported at Springfield and Saint Louis, Mo., and in parts of Iowa and Missouri drifted snow delayed trains. The snowstorm extended over the west Gulf states and the Lake region during the 18th. A depth of 2.50 was noted at Austin, Tex., and 2 fell at Conshatta, La. Sleet changed to snow at Abilene, Tex., and sleet in the form of snow pellets fell at San Antonio, Tex. Heavy snow interrupted railroad traffic in the lower lake region. On the 19th the snow area extended over Mississippi.

MONTHLY SNOWFALL.

The depth of snowfall for the month, as reported by regular and voluntary observers of the Weather Bureau, is shown on Chart V. The greatest depth of snowfall reported was 71, at Atlantic, Mich.; 70 was noted at Flagstaff, Ariz.; 62 at Conshatta, N. Y.; 51 at Cisco, Cal.; 50 at Elk City, Idaho; 41 at Saegerstown, Pa.; 34 at Cumbres, Colo.; and 31 at Siskiyou, Oregon. The monthly snowfall exceeded 20 in northern New England, northern, central, and western New York, along the shores of the lower lakes, in northeastern and western Lower Michigan, and northern Upper Michigan; and it exceeded 10 generally in the middle Atlantic and New England states, in the Ohio Valley north of the Ohio River, in areas in the middle and upper Mississippi valley, along the eastern slope of the Rocky Mountains north of the 40th parallel, in the mountain regions of Idaho, Washington, Oregon, and northern California, and in areas in Nevada, Utah, and Colorado. Snow fell as far south as the immediate middle and west coasts of the Gulf of Mexico, to the Rio Grande River in western Texas, and in the mountains of extreme southeastern Arizona.

Snowfall of 10 inches, or more, was reported as follows, and in states and territories where the maximum depth was less than that amount the station reporting the greatest is given: *Alabama*.—Decatur, 4.5. *Arizona*.—Flagstaff, 70; Crittenden, 11. *Arkansas*.—Harrison, 14; Black Rock, 11; Newport (a),

10.3; Harrisburgh, Marshall, and Rogers, 10. *California*.—Cisco, 51; Emigrant Gap, 41.5; Summit, 40; Truckee, 26.5; Dunsuir, 20; Sisson, 19.5; Towles, 18; Delta, 14.5; Shasta, 13; Walla Walla Creek, 12; Susanville, 10.5. *Colorado*.—Cumbres, 34; Climax, 28; Jefferson, 26.3; Meeker, 20; Ward District, 19.8; Pagoda (near), 19; Platoro, 17.8; Steamboat Spring, 17; Dillon, 16; Red Cliff, 14.5; Lay, 13.3; Smoky Hill Mine, 13; Greenhorn, 12.5; Delta, 12; Box Elder and Rico, 10.

Connecticut.—New Hartford (a), 18; Wallingford, 17; Hartford (b), 15; Falls Village, New Hartford (b), New Haven, Waterbury, and West Simsbury, 14; Southington and South Manchester, 13; Canton, Mansfield, and North Grosvenor Dale, 12; Stevenson, 11; Lebanon, Norwalk (b), and Voluntown, 10. *Delaware*.—Dover, 9.5. *District of Columbia*.—Washington, 20.5. *Florida*.—Pensacola, 0.5. *Georgia*.—Diamond, 3. *Idaho*.—Elk City, 50.5; Henrys Lake, 30; Garden Valley, 18.5; American Falls, 15.5; Ruthburg, 14.5; Boise Barracks, 14. *Illinois*.—Mascoutah, 27; Greenville, 23.1; Pana, 19.3; Alton, Flora, and Irishtown, 18; Louisville and White Hall, 17.5; Carlinville and Rockford, 16.8; Cairo and Fairmount, 16.5; Martinsville, 16; Chicago, 15.3; Philo, 14.6; Olney (a), 14.2; McLeansborough and Winnebago, 14; Charleston, 13.9; Beason and Jordans Grove, 13.5; New Haven, 13.2; Palestine, 12.2; Mattoon, 12; Springfield, 11.9; Havana, 11.5; Warsaw, 11; Aurora (a), 10.

Indiana.—Angola, 19.9; Delphi, 16.5; La Fayette, 16.2; Michigan City and Princeton, 16; Vevay, 14.1; De Gonia Springs, 14; Columbia City and Mount Vernon, 13.5; Marengo, 13.2; Marion, 12.9; Point Isabel and Terre Haute, 12.5; Huntington and Mount Vernon (a), 12; Farmland, 11.8; Butlerville, 11.5; Indianapolis, 10.9; Worthington and Jeffersonville, 10.6; Huntingburgh, 10. *Indian Territory*.—Eufaula, 6.8. *Iowa*.—Mason City, 20; Dubuque, 14.5; Mechanicsville, 13.8; McCausland, 13.2; Belle Plaine, Fort Madison, and Richland, 13; Fairfield and Muscatine, 12; Iowa City, 11.8; Davenport, 11; Des Moines, 10.4; Blakeville, 10.2. *Kansas*.—Seneca, 14; Leavenworth, 12.6. *Kentucky*.—Pellville, 11; Shelbyville, 10.9; Fort Thomas, 10.7. *Louisiana*.—Shreveport, 3.

Maine.—Indian Stream, 28; Kents Hill, 21; Calais, 20; Farmington, 19; Orono, 18.5; East Machias, 18; Cornish, 17.5; Kennebec Arsenal, 16.4; Fairfield, 16; Eastport, 15.2; Belfast, 14; Portland, 13.1. *Maryland*.—Fallston, 15; Baltimore, 14.5; Frederick, 13.2; New Market, 11.8; Fort McHenry, 10.7. *Massachusetts*.—Monroe, 21; Kendall Green, 19; Florida (b), Ludlow (a), and Mount Nonotuck, 18; Gilbertville, 17; Fitchburgh (a), North Billerica, and Monson, 14; Amherst Experiment Station (a and b), Chicopee, and Springfield Armory, 13; Dudley, 12.2; Amherst, Boston, Fitchburgh (b), Lawrence, Leominster, Salem (b), Wakefield, and Westborough, 12; Roxbury and Williamstown, 11; Concord, 10.5; Groton (a) and South Hingham, 10.

Michigan.—Atlantic, 71; Sand Beach, 54; Calumet, 44; Weldon Creek, 40.3; Harbor Springs, 37; Marquette, 27.4; Sault de Ste. Marie, 27; Bear Lake, 26.9; Hanover, 25.5; Manistee, 24.9; Fitchburgh, 24.5; Grand Haven, 24.2; Harrisville, 24; Benzonia, 22.7; Standish, 21.1; Caldwell and Jeddo, 21; Fairview, 20; Cheboygan, 19; Alma and May, 18.5; Fort Mackinac, 18.2; Fremont and McMillan, 18; Albion and Vandalia, 17.8; Detroit, 17.2; Lathrop, 17.1; Saint Ignace, 17; Howell, 16.5; Grape, 16.2; Eden, Grand Rapids, Hart, Saint Johns, and Thornville, 16; Hudson, Ivan, and Kalamazoo, 15.5; Marshall, 15.1; Lansing, 14.7; Allegan and Rawsonville, 14.5; Fort Wayne, 14.2; Ball Mountain, 13.8; Berlin, 13.7; Port Huron, 13.5; Birch Run, 13.3; Ypsilanti, 12.9; Bronson, 12.8; Arbela, 12.5; Highland Station, 12.2; Adrian, Noble, and Ovid, 12; Parkville, 11.5; Alpena, Ann Arbor, and Madison, 11.3; Grayling, 11; Harrison, 10.5; Bellaire, 10.2; Benton Harbor, 10.1; Flint, Hayes, and Washington, 10.

Minnesota.—Lake Winibigoshish, 7.8. *Mississippi*.—Vicks-

burg and Booneville, 5. *Missouri*.—Fox Creek, 29; Jefferson Barracks, 24.6; New Haven, 22; Jerome, 20; Steelville, 18.5; Saint Charles (b), 16; Zeitonia, 14.5; Chillicothe (a), Darksville, Phillipsburgh, Saint Louis, Springfield, and Warrenton, 14; Marble Hill, 13.5; Harris, 13; Oregon (a), 12.9; Lebanon and Rolla, 12; Withers Mills, 11.5; Glasgow and Princeton, 11; Eldon, Excelsior Springs, Gordonsville, Hermann, and Oregon (b), 10. *Montana*.—Fort Missoula, 15.5; Fort Custer, 13.1; Helena, 11. *Nebraska*.—Fairbury, 22; Alliance, 17.8; Ansley, 17; Ravenna, 16.3; Hay Springs, Minden, and Pawlet, 15.5; Hayes Centre, 14.8; Fort Robinson, 14.7; Lexington, 14; Grant and Weeping Water, 13.5; Hastings, 12; Wallace, 11.2; North Platte, 10.2; Auburn (a) and Tecumseh, 10.

Nevada.—Tuscarora, 16; Palisade, 13; Cranes Ranch, 10. *New Hampshire*.—Berlin Mills, 26.5; Stratford and West Milan, 24; Littleton, 19; Concord (a), 14.8; Antrim, 14; Nashua, 13.5; Manchester, 12.2; Peterborough, 12; North Conway, 11; East Canterbury and Hanover (a), 10. *New Jersey*.—Dover, 19.7; Oceanic, 17.5; Highland Park and New Brunswick, 16.8; South Orange, 16.5; Tenaflly, 16; Junction, 15.4; Belleville, 15; Bayonne, 14.9; Somerville, 14.5; Rancocas, 14.3; Belvidere, 14; Blairstown, 13.5; Deckertown, Lambertville, and Newark, 13; Beverly, 12.6; Locktown, 12.5; Camden and Newton, 12; Moorestown, 11.7; Gillette, 11; Salem, 10. *New Mexico*.—Coolidge, 16.5; Chama, 11.

New York.—Constableville, 62; Eden Centre, 59.5; Number Four, 53.8; Potsdam, 52; Turin, 51; Fort Porter, 48.2; Le Roy, 48; Buffalo, 46.6; Utica, 42.5; Malone, 42.2; Sherman, 38.5; Hess Road Station, 37.6; Humphrey, 33.5; Oswego, 31.7; Brookfield, 31.5; Albion, 29.8; Canton, 28.2; Perry City, 26.9; Plattsburgh Barracks, 27.5; Geneva, 27.2; Lyons, 27; Arcade, 26.8; Rochester, 26.4; Lockport, 25; South Canisteo, 24.8; North Hammond, 24; Fort Schuyler, 23; Angelica, 22; Madison Barracks, 21.6; Fleming and Romulus, 20; Ithaca, 19.9; Victor and West Point, 19.5; Alfred Centre, 18.5; Fort Wadsworth, 18; Cooperstown, 17; Oxford, 16.8; Factoryville and Honeymead Brook, 16.4; New Lisbon, 15.5; Port Jervis, 13; Boyds Corners, 14.8; Addison, 14.5; Jamestown, 14; Glens Falls, 13.8; New York, 13.1; Binghamton and Middletown, 13; Albany, 10.

North Carolina.—Oak Ridge, Salisbury, and Saxon, 8. *North Dakota*.—Napoleon, 14. *Ohio*.—Bement, 27; Orangeville, 25; Oberlin, 24.4; Wooster, 22.2; Weymouth, 22; Cleveland, 20.5; Carrollton, 20.2; Wauseon, 19.2; Gratoit and Harbor, 19; Akron, 18.7; Marion, 18.2; Ashland, 18; Westerville, 16.8; Youngstown, 16.4; Tiffin, 16.2; Bangorville and Van Wert, 16; Sandusky, 15.8; Canton, 15.3; Elyria, 15.1; Fostoria and Montpelier, 15; Kenton and Upper Sandusky, 14; Waynesville, 13.9; New Alexandria and Toledo, 13.5; Napoleon, Springborough, and Logan, 13.4; Wapakoneta, 13.1; Granville, 12.9; Columbus, Dayton, and Findlay, 12.5; Lordstown and Clarksville, 12; Newcomerstown, 11.5; Celina, Georgetown, and North Lewisburgh, 11; Bellevue, 10. *Oklahoma Territory*.—Oklahoma City, 5. *Oregon*.—Siskiyou, 31.

Pennsylvania.—Saegerstown, 40.6; Blue Knob, 32.5; Erie, 27; Corry, 20; Salem Corners, 19.9; Wilkes Barre, 18.5; Coatesville, 18.2; Clarion, 17.4; Lock Haven, 17.3; Eagles Mere, 16.4; Easton, 16.1; Grampian Hills, Somerset, Stoyestown, and Wellsborough, 16; Ligonier and New Castle, 15.5; Pottstown, 15; Pleasant Mount, 14.9; Drifton, Kennett Square, and Quakertown, 14; Girardville, Swarthmore, and Lebanon, 13.5; Coopersburgh, 13.2; York, 13; Westtown, 12.9; Dyberry, West Chester, and Emporium, 12.5; Le Roy, 12.4; Honesdale, Hulmeville, and Uniontown, 12; Philadelphia, 11.2; Frankford Arsenal, 11; South Eaton, 10. *Rhode Island*.—Providence (c), 8. *South Carolina*.—Belmont, 1. *South Dakota*.—Oelrichs, 25.5; Fort Meade, 12.4; Cross, 11.9; Webster, 10.9. *Tennessee*.—Chattanooga, 10.8. *Texas*.—Arthur City and Silver Falls, 6. *Utah*.—Ogden (a), 17; Blue Creek, 15; Salt Lake City, 13.8; Provo City, 13; Promontory, 10.

Vermont.—Lunenburg, 27; Enosburgh Falls, 23; Burlington and Chelsea, 22; Strafford, 19; Northfield, 16.2; Jacksonville, 16; Brattleborough (a), 15.5; Cornwall, 14; Vernon, 13; Wells, 12. **Virginia.**—Lynchburgh, 17.2; Lexington, 15.7; Blacksburgh, 15; Nottoway C. H., 14.2; Richmond and Staunton, 14; Charlottesville, 12.5; Christiansburgh, 12; Dale Enterprise, 11.5; Salem, 11.4; Avon, 10.2. **Washington.**—Spokane, 13.1; Chelan, 11.3; Walla Walla, 10.7. **West Virginia.**—Parkersburgh, 21.2; Elkhorn, 16.2; Charleston, 14; Tannery, 13.2; Nuttallburgh, 12; Ella, 10.2; Harpers Ferry, 10. **Wisconsin.**—Crandon and Beloit, 20.1; Green Bay, 15.1; Kenosha, 15; Florence and Harvey, 13.9; Bayfield, 13.5; Embarrass, 13; Peshtigo, 12.6; De Pere, 12.5; Prairie du Chien, 12.4; Appleton, 12; Oconto, 11.7; Oshkosh, 11.2; Manitowoc, 11.1; Fond du Lac, 11; Cadiz, 10.6; Koepenick, 10.5; Lancaster and Portage, 10. **Wyoming.**—Sundance, 21.5; Fort Yellowstone, 14; Fort McKinney, 10.2.

DEPTH OF SNOW ON GROUND ON 15TH AND AT THE CLOSE OF THE MONTH.

Chart VI shows the depth of snow on the ground at the close of the month, as reported by regular and voluntary observers of the Weather Bureau.

On the 15th a depth of more than 10 was reported in extreme northern New England, central and western New York, eastern and western Lower Michigan, Upper Michigan, eastern North Dakota, over the east part of the middle plateau region, and from western Utah over the northern plateau region. The greatest depth was reported over southern Idaho, where it varied from 15 to 30, and in the mountains of Colorado, extreme northern Upper Michigan, and northeastern North Dakota, where it exceeded 30. A depth of 5 to 6 was reported in northern Arkansas, and trace to 0.5 on the middle Gulf coast.

At the close of the month a depth of 20 to 30 was noted at points in Idaho, Colorado, North Dakota, Upper Michigan, and New York; more than 10 over the northern plateau region and the north and east parts of the middle plateau, in eastern North Dakota, and in areas in the Lake region, New York, and northern New England, and trace of snow was reported as far south as Tennessee and central New Mexico.

HAIL.

Description of the more severe hailstorms of the month is given under "Local storms." Hail was reported as follows: 1st, Arkansas, Missouri, and Washington. 2d, Pennsylvania.

5th, Alabama, Georgia, Mississippi, and Tennessee. 6th, Georgia and Florida. 7th, Alabama. 9th, Alabama, Georgia, and Louisiana. 10th, Missouri. 11th, Louisiana and North Carolina. 12th, Alabama, Louisiana, and Mississippi. 13th, Nevada, Oregon, and Texas. 14th, Louisiana and Mississippi. 15th, North Carolina. 17th, Florida. 18th, Georgia and Texas. 19th, Louisiana and Texas. 20th, North Carolina. 24th, New Mexico. 26th, California. 29th, Arizona. 30th, Arizona, New Mexico, and Wisconsin. 31st, Arizona and New Mexico.

SLEET.

Description of the more severe sleet storms of the month is given under "Local storms." Sleet was reported as follows: 1st, Iowa, Kentucky, Michigan, Missouri, New York, and Vermont. 2d, Michigan, New York, and Ohio. 3d, New Hampshire. 4th, Ohio. 5th, Virginia. 6th, Alabama, Connecticut, Massachusetts, Mississippi, Nevada, New York, Pennsylvania, Texas, and West Virginia. 7th, Georgia, Nevada, and Texas. 8th, Arkansas. 9th, Alabama, Georgia, Mississippi, and South Carolina. 10th, Arkansas, Kentucky, Louisiana, Mississippi, Missouri, and North Carolina.

11th, Arkansas, Illinois, Indiana, Kentucky, Louisiana, Mississippi, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Texas, and Vermont. 12th, Arkansas, Indiana, Kentucky, Louisiana, Maine, Michigan, Mississippi, New York, Ohio, Pennsylvania, Tennessee, Texas, and West Virginia. 13th, Arkansas, Indiana, Kentucky, Louisiana, Maine, Mississippi, New York, Ohio, Tennessee, Texas, and West Virginia. 14th, Georgia, Louisiana, Mississippi, Ohio, Tennessee, Texas, and West Virginia. 15th, Connecticut, Georgia, Maine, Massachusetts, New Jersey, New York, North Carolina, and Virginia. 16th, Kentucky. 17th, Arkansas, Florida, Pennsylvania, and Texas.

18th, Arkansas, Connecticut, Kentucky, Louisiana, Mississippi, New Jersey, New York, North Carolina, Pennsylvania, Tennessee, Texas, Vermont, and West Virginia. 19th, Alabama, Colorado, Connecticut, Louisiana, Maryland, New Jersey, New York, North Carolina, Pennsylvania, Tennessee, Texas, Vermont, and West Virginia. 20th, Georgia, Louisiana, New Jersey, North Carolina, and Virginia. 21st, Texas. 23d, Ohio. 24th, Virginia. 25th, Kentucky. 27th, Maine. 29th, Ohio, Pennsylvania, and Utah. 30th, Massachusetts, Michigan, New Mexico, and Ohio. 31st, Colorado, Nebraska, New Mexico, and South Dakota.

WINDS.

The prevailing winds in January, 1892, are shown on Chart II by arrows flying with the wind. In New England and on the middle-eastern slope of the Rocky Mountains northwest to north winds were most frequently noted; in the middle Atlantic states, the Ohio Valley and Tennessee, the upper lake region, the upper Mississippi valley, and on the northeastern slope of the Rocky Mountains they were generally from southwest to northwest; in the south Atlantic states and the Missouri Valley, from west to north; over the Florida Peninsula, in the east Gulf states, over the middle plateau region, and along the south Pacific coast, from northwest to northeast; in the west Gulf states, from the north; in the lower lake region and on the southeast slope of the Rocky Mountains, from south to west; in the extreme northwest, from west to northwest; over the northern plateau region, from southeast to south; on the north Pacific coast, from east to south; and over the southern plateau region and on the middle Pacific coast, variable.

HIGH WINDS.

[In miles per hour.]

Wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows: 1st, 60, nw., at Chicago, Ill.; 52, nw., at Milwaukee, Wis.; 50, se.,

at Lexington, Ky. 2d, 55, w., at Chicago, Ill. 6th, 60, e., at Block Island, R. I.; 50, e., at Tatoosh Island, Wash. 10th, 52, ne., at Kitty Hawk, N. C. 15th, 53, n., at Kitty Hawk, N. C. 19th, 56, s., at Huron, S. Dak. 21st, 55, sw., at Buffalo, N. Y. 25th, 69, se., at Fort Canby, Wash.; 66, e., at Tatoosh Island, Wash. 26th, 56, se., at Fort Canby, Wash.; 55, nw., at Atlantic City, N. J.; 54 nw., at Block Island, R. I.; 54, nw., at Woods Holl, Mass. 27th, 56, nw., at Woods Holl, Mass. 28th, 60, s., at Fort Canby, Wash. 29th, 61, s., at Fort Canby, Wash. 30th, 65, ne., at Block Island, R. I.

LOCAL STORMS.

1st.—Stormy weather prevailed from the upper lake region to Texas. At Marquette, Mich., rain changed to snow 11.50 a. m. A strong west gale began 6.45 p. m., and continued during the 2d, with maximum velocity 44 miles per hour from the northwest at 8.15 a. m., 2d. Amount of snowfall, 12.6 inches. At Detroit, Mich., a gale set in 9.12 a. m. Rain began at night, changing to sleet the morning of the 2d and to snow in the afternoon. The maximum wind velocity, 42 miles per hour from the southwest, was noted 4.32 a. m., 2d. The severest storm of the season was reported at Milwaukee, Wis. Rain fell during the day and snow at night. Steamers